[Article] A design training model in Italy

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São Leopoldo, RS. Av. Unisinos, 950. Bairro Cristo Rei, CEP: 93.022-000. Atendimento Unisinos +55 (51) 3591 1122
Designed by Jully Rodrigues

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The exploring designer: A design training model in Italy

O designer exploratório: um modelo de formação para o design na Itália

Claudio Germak
claudio.germak@polito.it
Politecnico di Torino, Architectural and Industrial Design Department. Castello del Valentino, Viale Mattioli 39, 10125 Torino, Italy.

Marco Bozzola
marco.bozzola@polito.it
Politecnico di Torino, Architectural and Industrial Design Department. Castello del Valentino, Viale Mattioli 39, 10125 Torino, Italy.

Abstract

In Italy, university courses on Industrial Design were born to train skilled operators to critically assess projects and to pit against different scenarios, combining the technical and production dimension with the sociocultural one. The teaching is aimed at building relationships among function, suggestion, innovation, and adaptation to the context. Nowadays, the situation is different and notably two conditions have brought to a revision of training models and education to the project within the university purview. First, the awareness that Design is now an intersection, a sort of square where human and technical sciences meet and where the Designer is a go-between, whose task is to integrate different skills and knowledge. Second, the recognition that Design has evolved together with the traditional question "how to do it?", since today the Designer is asked also "what to do?" or "where to do it?". Therefore, from a problem solving actor to the exploring researcher, a designer must be able to find out new product types and sectors, new production ways and new consumer behaviours. Based on these challenging scenario for Design, this article aims to discuss the questions "how to do it?", "what to do?" and "where to do it?", which correspond to three training aims having an always increasing complexity in educating the designer to become: an aware designer, able to read the present (explorer 1); a scenario designer, able to foreshadow the future (explorer 2); and a surfing designer, able to go beyond the common sense (explorer 3).

Key words: design training, meta-design, exploring design.

Resumo

Na Itália, os cursos universitários de Design Industrial nascem com a intenção de formar operadores treinados para uma visão crítica do projeto e capazes de lidar com diferentes cenários, combinando a dimensão técnica da produção e da cooperação econômica com a dimensão sócio-cultural. Foram objetivos de ensino de projecto, a relação entre a função, a sugestão, a inovação e adequação ao contexto. Hoje a situação mudou e duas condições, em particular, levaram a uma revisão dos modelos de formação e projeto pedagógico na universidade: a consciência de que o projeto é hoje uma intersecção, uma praça onde se encontram as ciências humanas e técnicas, de modo que o designer é chamado à mediação e integração de diferentes conhecimentos e competências; a constatação de que o design evoluiu sob a questão do tradicional "como fazer?". Hoje o designer é interrogado sobre "o que fazer?" ou "onde fazer?". De uma dimensão de solucionador de problemas passa, portanto, a de pesquisador, um designer capaz de investigar novas tipologias de produtos, novos setores, novos modos de produção e consumo. Com base nesse cenário desafiador para o Design, este artigo busca discutir as perguntas "como fazer?", "o que fazer?" e "onde fazer?", que correspondem a três objetivos formativos diferentes de complexidade crescente na formação do designer: o designer com consciência, na leitura do presente (Explorador 1); o designer de cenários, para prefigurar o futuro (Explorador 2); e o designer navegador, para descartar o senso comum (Explorador 3).

Palavras-chave: educação de projeto, meta-projeto, design exploratório.

Introduction

Value is to be found not in the production of commodities, but in knowledge (Granelli, 2006). This means that the most successful initiatives are those that manage to arouse emotions, symbolic values, memories, and quality of life.

Design products have to some extent changed their characteristics by following the evolution of the social, industrial and cultural context. When talking of the "product as a technical individual" as long ago as 1976, Tomás Maldonado warned designers about the risk of just considering the aesthetic dimension of products. However, now that design has increasingly become "a form of learning of great contemporary potential, which is pervasive and effective, inter-relational and changing", design products are characterized by the way they reveal a multidisciplinary approach (Celaschi, 2008).

Changes in design and production processes, the flexible approach of design, and the transformation of products into services indicate an opening up of meanings, with the result that the planning/process/product cycle is now accompanied by design activity.

What is a design activity?

It is the sum of objectives, skills and procedures that can be shared by a number of people who take part in the entire process from concept to product/service.

This means that design is understood and accepted as a cultural value that is added to the project, and as a strategic resource for the economic and cultural development of an area.

It thus involves the planning system, the enterprise system, and the user system to assess the parameters to be used for measuring the quality and competitiveness of the design activity.

Amongst the parameters that are used today to define the degree of innovation (quality and competitiveness), it is found:

(a) social innovation, considered as the ability to raise awareness among users, and to promote sustainable and eco-friendly attitudes; a focus on the "human factor" in all its complexity as the main - though not sole - recipient and player in the product system; a commitment to non-discriminatory design, which can be used by everyone;

(b) technological innovation, when referred to appropriate, conscious and sustainable use of traditional and advanced technologies;

(c) innovation in manufacturing, when it is focused on new strategies for production (value chain), promotion and distribution that are competitive on the international market, but oriented towards "glocalisation" - in other words, defending specific territorial identities;

(d) innovation of expression (which is not style alone), indicating the true maturity of expression that can be found in original (not "bizarre") products, which are capable of conveying added cultural value.

What is a design product/service?

It is an activity in which design constitutes an additional cultural value, accompanied by changes in design and production processes. Design as the added cultural value of a product/service, compared with another that lacks this value, can be measured in terms of the quality of the project and process.

Industrial, artisan? Today, the activities and forms of design that need to be considered are not solely those of mass production, but also those of artisan production, an area in which there are already cases of "excellence" and "process organisation" (crafts districts are an example of this), in which design is one of the strategic resources employed for the economic and cultural development of the area.

What is a design project?

From the Latin "projectus" (consisting of "pro", forward, and "jacere", to throw), a "project" throws forward its own vision of the future.

In the view of Giuseppe Ciribini, a professor at the Politecnico di Torino from 1963 to 1988, a "project" is: "...the study of the potential for implementing an idea brought about by given motivations, to achieve certain results" (Ciribini, 1984, p. 12).

The broader, more complex and problematic the vision, the more it will be the result of consensus, interaction and discussion. The greater the scope of the project, the greater its projection and its ability, in the present, to see beyond the present. According to Clino Trini Castelli, "A conscious project for the present is more realistic and useful also as a project for a possible future" (Castelli, 1999, p. 124).

Every project that is tackled constitutes research. "you have to realise that research is everything, and the individual object produced is one stage of it: more of a momentary pause than an end" (Castiglioni, 2006, p. 64). This is how Achille Castiglioni expressed his feelings about the constant evolution of projects and of design products.

The world of design has become more complex today, and there is talk not just of products but of systems of products, services, materials, and contexts, and the instruments used in research may vary according to the area they are used in.

The common starting point for a project is therefore exploration - in other words, the attempt to reach and give an interpretation to what it is not known. "If you are not curious, forget it. If you are not interested in others, and in what they do and how they act, then the profession of designer is not for you" (Castiglioni, 2006, p. 64).

As a state of constant exploration, curiosity is a mental attitude that is brought to bear through in-depth knowledge of phenomena, leading the individual to take from every source, listen to every voice, and pick up every cue.

Industry, society and schools need minds that are primarily critical, and thus assertive, and then proactive – never obsequious or submissive. It is necessary to be open to doubt, questioning the status quo and exploring all that is possible. Furthermore, today, cross-subject work has become not just a necessity, but the reality of the politechnic method.

Integration between classical studies, architecture, engineering and design has become the starting point for research and university teaching method. This is a

generalised, almost universal characteristic, but at the same time it is known that research and teaching method differ according to the context and the area in wich they are performed. Local situations have a great effect on research, determining the sectors and the fields of knowledge concerned.

In our geographical area, Turin and Piedmont, the situation is absolutely heterogeneous. Turin is a town of dissonances, beginning with design: one on hand, there is a vocation for mass production (due to the evident influence of the motor-car industry); while, on the other hand, there is a tradition for expressive work (not only beauty) where art, technology and function melt (Germak, 2002, p. 34-39).

Cristina Morozzi compared the hybridization of piedmont's culture with the bûnet, the typical cake of Piedmont, characterized by taste, sweet taste of chocolate, and against taste, as the bitter taste of the macaroon (Morozzi, 1995, p. 15-17).

The education at sustainability crosses all the training process; it starts with the first level courses (three-year school) and it continues in the Master's Degree level (two-year school), the only one european eco-design school. In this sense, it is found an original approach in comparison with the other thought schools: it is needed to project the people behaviour change, not only putting in value small, local and social, but also changing the same ways to produce. This is the systemic approach, where the one waste product of an industrial mass production phase (output) become a resource (imput) for a new different production. You can apply the method to each design sector privileging open and not linear systems.

This scenario certainly influenced our university design training model, particulary in Piedmont.

Therefore, designer shall be referred as an "explorer": a professional who can be seen in three distinct ways (as an explorer 1 - a "conscious" designer; explorer 2 - a "scenario" designer; explorer 3 - a "navigation" designer). These are not simply stages along an evolutionary path but possible and alternative states, which may be chosen as approaches for various situations (particular moments, interlocutors, or research opportunities). These three figures thus actually correspond only to the various configurations of the same flexible designer, who is able to tackle areas of research with the same degree of focus, however different they may be in terms of complexity.

The three different figures referred to do prepare the way one for the other. This is the methodological approach adopted by the training project for the Industrial Design course at Politecnico di Torino. In this school, the education of a designer who is capable of managing the various complexities of design with a conscious and sensitive approach thus requires three forms of applied research to be carried out during the first level of the degree course. They are those of the: conscious designer, scenario designer, and navigation designer.

Explorer 1: the conscious designer

The "conscious" designer seeks a cultural value for his or her product based on the scope and precision of the performance offered. This leads to a product that can be seen to be designed with discipline, in accordance with a performance-based and deductive methodology[1], with regard to which a product is established as the materialisation of a project cycle whose assessment parameters are the needs, requirements (Alexander, 1967, p. 67), and the performance levels demanded, offered, and provided. In other words, a product that:

- is capable of solving a series of problems;
- performs its duty without shortcomings;
- is sustainable;
- is non-discriminatory;
- has its own expressive identity.

During a meeting of the International Standards Organisation (ISO), Giuseppe Ciribini formulated the so-called "exigential hypothesis", which was expressed in this declaration of intent: "standardisation in the construction sector must recognise that a building organisation is produced to respond to human needs, and that these needs must be presented in the form of incoming requirements to which out-going performance must correspond".

About 10,000 students have used this model in their education over a period of twenty years at Politecnico di Torino (De Ferrari and Bistagnino, 1992, p. 4-6)[2], and the method is still valid today, with some additions that include, in particular, an extension of the meta-design phase, with an analysis of the scenario in which the product response will occur (explorer 2 – the scenario designer) and with greater attention paid to environmental sustainability.

The flexibility that students acquire during the educational course becomes of fundamental importance for managing projects in various work environments.

The key to teaching in schools is to relate and correctly calibrate the links between function, inspiration, innovation and adaptation to context. All these are essential for good design and can be attained primarily by means of a methodology that is well organized and agreed upon.

Requirements are of fundamental importance when designing a new product: "[...] when designing a product, it is of fundamental importance to define the requirements in terms of quality, to establish which

[1] The meta-planning approach found its first applications in the town planning and industrial production in architecture fields: just in this second field, Ciribini, in 1972, contemplated the requirement hypothesis as basic point of the technical regulations for industrial manufacturing to ensure that products complied with users' demand for quality.

[2] The performance-based methodology was originally adopted as early as the 1970s in the Industrial Design course later held by Enzo Frateili, Giorgio De Ferrari and Luigi Bitagnino at the Faculty of Architecture of Politecnico di Torino. This was the first section of the present-day course on Industrial Design. The Industrial Design course at Politecnico di Torino started up in 1996 with the introduction of the university diploma in Industrial Design, or DUNDIT - Diploma Universitario in Disegno Industriale. In 1999 the degree diploma became a degree course, in 2000 a degree course in Graphic and Virtual Design was introduced, and in 2001 came the Ecodesign teaching degree course in Ecologically Sustainable Product Design.

ones are indispensable and to decide what value is to be attributed to them. [...] The values based on the quality requirements for any particular product depend on the expectations of the customer - expected quality - on what is offered by the company - actual quality - and the impact of this on the customer - perceived quality" (De Risi, 2001, p. 462).

Explorer 1 - the conscious designer – works in close contact with the company, in cooperation with some of its internal resources (or external: services, marketing, or image consultants), who take part in the process by pointing to sector-related (i.e., not structural) factors that the project needs to take into account.

The conscious designer gives a consistent response that is not subjected to in-depth verification or to fundamental amendments to the original brief. The degree of innovation of the proposed product must be compatible with the company's market position and technology, and production must be feasible within set times and costs.

This approach cannot be fully attributed to a problem solver. It would also not be true to say that the masters of Italian design (for example) have simply been problem solvers. Each one has made their own contribution to the development of design as a social breakthrough.

Design in the past (and Italian design in particular) opened up a path in which invention and innovation fought for supremacy. Thanks to the designers of those years, today's conscious designers can trace out new and consistent directions in already explored lands, just as they can take a known production system as their point of reference and tackle it from within, looking outwards towards society.

In design products, invention is still considered to provide a fundamental contribution to the success of both the product and the company: "companies that are considered innovative are unbeatable in terms of product planning, management and communication – but not in terms of invention" (Granelli, 2006, p. 59).

Creativity is by definition the creative process of having ideas, which in themselves are neither good nor bad. Ideas are often only points of view, ways of seeing or reassessing things, sometimes new things, and at other times cues and indications for new things that might emerge in the future (Testa, 2005, p. 15-17)[3]. Invention, on the other hand, is to be considered as a potential, which may be accidental, that can be introduced into a process that, if well organized and capable of generating positive reactions, might lead to innovation (otherwise only to something new).

The "conscious" designer has before him:

- a principal with a specific request;
- a specific theme to work on;
- a search for answers to the question "how?"[4], with regard to what already exists.

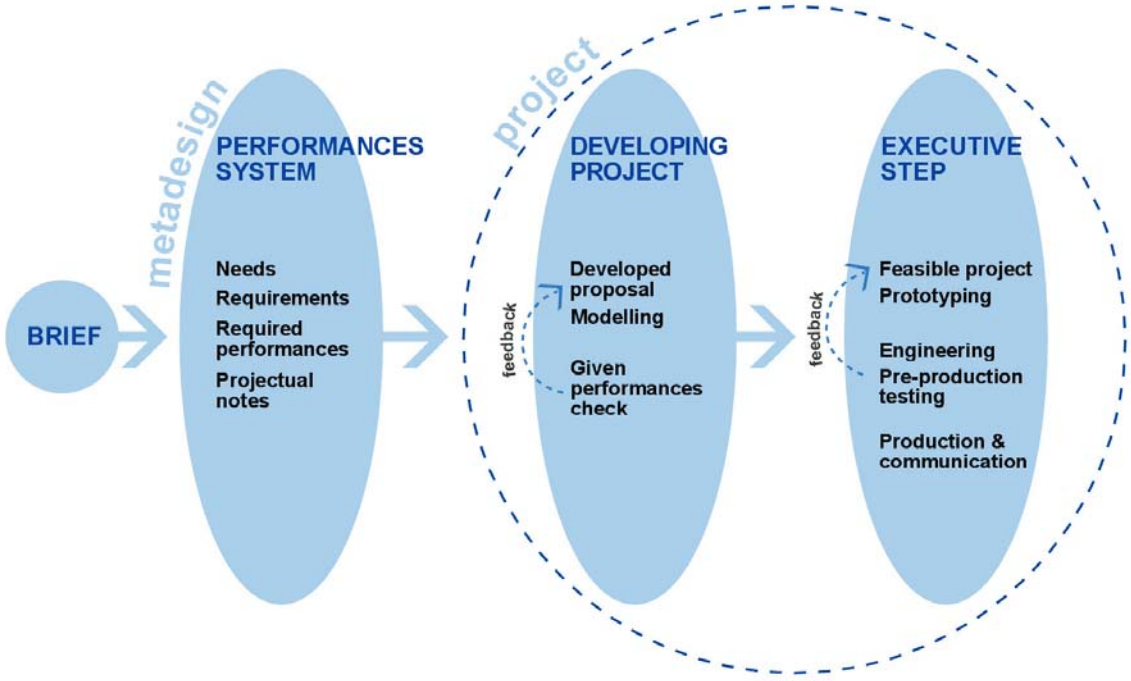

Figure 1. Explorer 1 - Brief: how to do? Beginning from fixed typologies and functions.

[3] The idea is summed up by Annamaria Testa in the formula "C=nu": creativity comes from alliance between what is new and what is useful. One excellent reason for reflecting on creativity is that it breeds innovation, which in turn is the "offspring of competence and previously formulated experience and intuition".

[4] Fora, the R&D section of the Danish Enterprise and Construction Authority, has very recently published a paper that presents a new type of business: the concept-design company. Concept-design companies (with physiological, economic and design skills linked together in an innovative way) provide answers to the question "What?" by creating concepts, while, by creating product projects, design companies provide the answer to the question "How?".

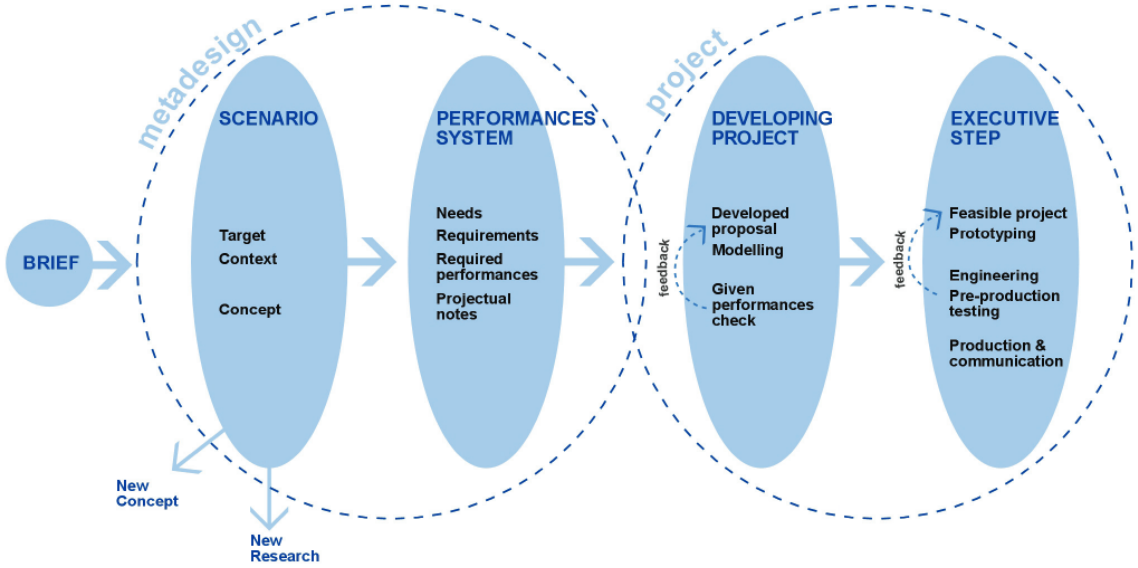

Figure 2. Explorer 2 - Brief: what to do? Beginning from fixed materials and technologies.

Explorer 2: the scenario designer

When the overall vision expands, research becomes collective and is shared among a number of people: the designer works together with other areas of expertise (business, territorial, specialistic). A key aspect of this research is the creation of a scenario in which contextual values are accumulated to form critical mass: social, cultural, ethical, biological, and technological values that can be shared at a global level but that characterise the enlarged area of investigation.

"The purpose of identifying the target users and the production and consumption scenarios in which a certain product will end up is precisely that of helping the designer create a sort of targeted database – even before he picks up a pencil or a mouse – which he can use during the design stage" (Bistagnino, 2003, p. 11).

The scenario is a critical mass of data and references built up around the issues in hand. It is a survey of the consumer situation carried out in order to find the characteristics of the end users the project is targeting. The scenario includes historical, socio-cultural, industrial, and environmental-technological aspects in order to establish the objectives of a conscious project.

The construction of the scenario sometimes leads to intuitive ideas that go beyond the normal confines of the project and produce feedback for the initial brief, influencing it and bringing in new perspectives – sometimes totally different from its initial orientation (new concepts).

The aim of the scenario designer is to create new families of products (or systems, services, and so on) not in order to innovate the product itself, but to achieve innovation with more wide-ranging effects: developing or providing a system, a company, a territorial area, a sector, or a process, interpreting the situation and its potential, and creating "new connections".

This survey of the scenario opens up and gives greater value to the request made by the principal: a request that is sometimes mundane, generic, and imprecise, and that is reorganised to create a brief with a greater focus on variables that had previously not been considered.

The creation and interpretation of the scenario will lead to new concepts and guidelines (and feedback on the brief, in a self-enhancing virtuous circle). It is itself a stand-alone "product", which may also be considered as independent from the previous development of the project, helping direct future strategic decisions, in line with – or breaking away from – the system as it stands at the time.

The scenario designer faces:

- a principal;
- a sector (industrial, cultural – opening out the context);
- a search for possible answers to the question "How?" (Johansen et al., 2007).

Explorer 3: the navigating designer

Explorer 3 looks for new domains and meanings in order to open up possible horizons of innovation. Assisted by insatiable curiosity, open-minded colleagues and a broad range of complex, multidisciplinary cultural and material references, he or she embarks (Mari, 2004)[5] on all-encompassing exploration of open areas – oceans to be

[5] At the First Faculty of Architecture at Politecnico di Torino on 20 May 2004, during the presentation of his book La valigia senza il manico. Arte design e karaoke, Enzo Mari (2004, p. 31) described how he threw himself headlong, together with his students into wide-ranging projects in areas that were new for himself as well as for the others. And he states in his book: "I try not to lose sight of the countless development prospects there are in the overall horizon - including those that cannot be worked on and developed at the time. Here, I am talking about our ability to gradually make decisions, very rapidly assessing a few sufficiently clear opportunities together with countless others that are contradictory and understandable only through intuition, just as the hare being chased decides to make the leap that will possibly save its life...".

investigated in search of new worlds – which with time and application may be confirmed or refuted.

Like an explorer in the past, the navigating designer sets sail with his crew (brainstorming is fundamental), freely navigating the Internet and elsewhere. He or she takes the most diverse possible range of instruments, using key words that can be chosen on the basis of the desired overall aim of the operation, and thus of the future configuration of the design project. These key words are the most precise and inclusive form of clarification for the meta-domain: they may concern behaviour, methods, materials, and more. They are words and signifiers that fill vast panoramas of meanings, and as such they can be seen to be full of potential – which the research may or may not give concrete form to. In this sense, the navigator becomes an "innovating party": by developing the proactive potential of the various meanings of the key words, he proceeds unfettered by the limitations of common sense.

The navigating explorer is a proactive figure in search of new uncharted territories for his design project. He is an innovator, because "at the psychological level, innovators are capable of distancing themselves from common sense [...] just as the foreigner lives in a state of constant crisis since nobody else shares his common sense" (Jedlowski, 1993, p. 14).

The intention is to discover potential and hidden "new worlds of design" using free research, in which feasibility is a matter that is dealt with only later on in the form of feedback at from explorers 1 and 2. Explorer 3 will produce ideas – "design visions" that he needs to assess (so he will have to be capable of measuring their effectiveness in relation to a vision of the world that is open to innovation) - and he can dress up again as explorer 1 or 2 in order to create them.

For the "navigating" designer:

- there is no client and brief;
- there is a meta-domain (enlarged scope) which is organised in key words - for example, time, air, water, light, etc. These are panoramas with vast horizons, to be investigated with different instruments. They tend to be free, and can be organised and integrated in the research process;
- there is an investigation of possible answers to the question "Where?", in the sense of a search for possible new areas unexplored by design.

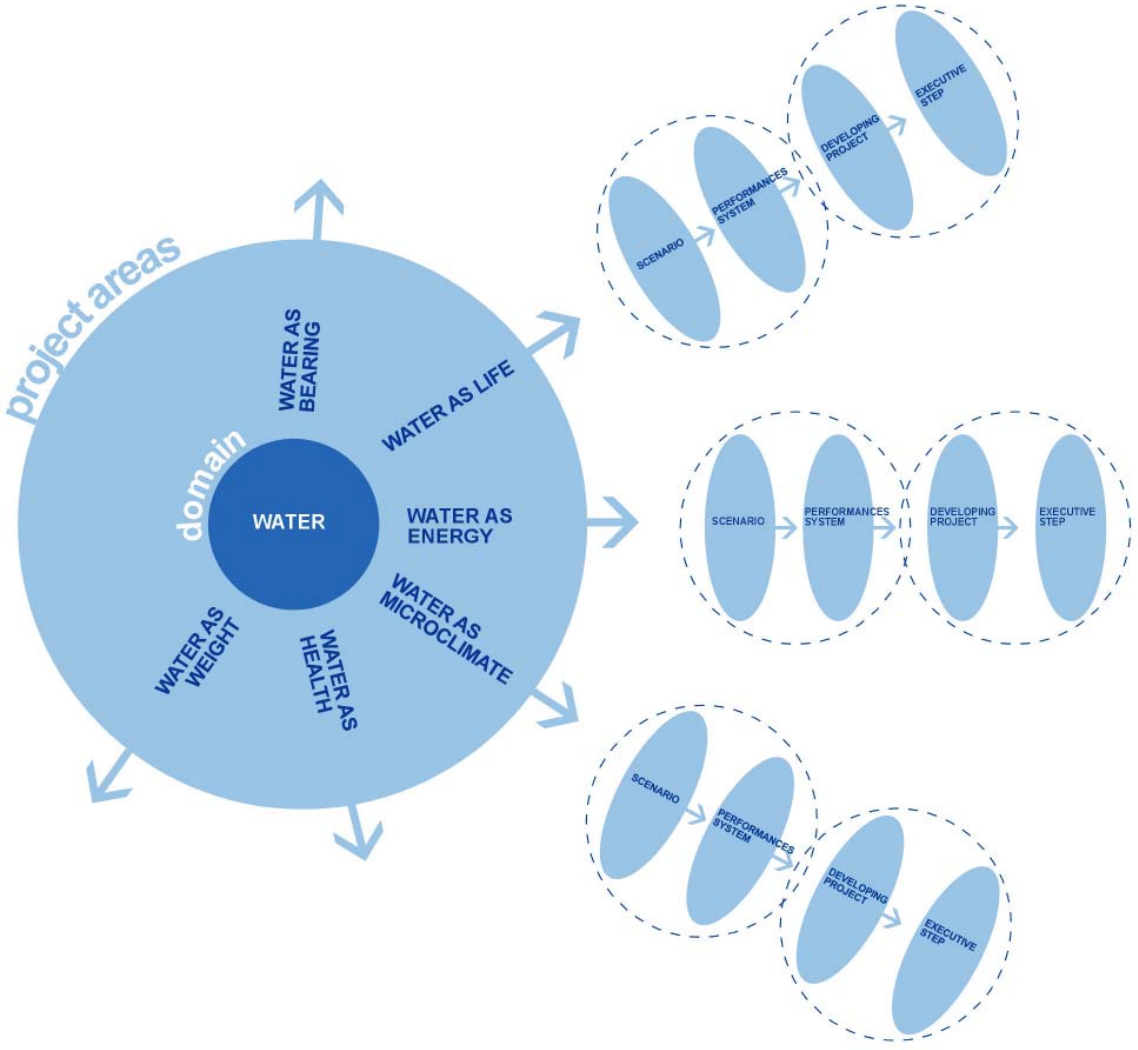

Figure 3. Explorer 3 – Where to do? Beginning from a spread ambit.

There is no precise definition, but simply a dictionary-style search for meanings that can be associated with relevant key words. The first interaction with the meta-domain comes with brainstorming and focus groups, which need to establish the first lines of research (for example, time, which may be objective or subjective).

The meta-domain is "navigated", studied in depth and revealed from all points of view of its "axes", through the search for key words. There is an affinity with free searching: from the extraordinary wealth of the Internet, it offers different, sometimes surprising visions characterised by a "subjective variable" (the choice of results from thousands of possible ones) which probably accounts for at least half of what is offered.

It is difficult to divorce individual creation from the collective result. Roles are mixed and routines abolished; and one works more through constant synthesis. The expected result is the complexity that countless visions give of a subject, quite apart from the quality of each one, but with the awareness of the chain reaction that each contribution triggers off from what has gone before.

Explorer 3 takes part in all the processes, playing different roles and bringing out different skills, promoting a multidisciplinary and multi-cultural approach, directing and managing interaction between forms of knowledge and experience, bringing in his or her own experience, helping assess the results and bringing them into constant and conscious interaction with the particular context.

The strength of this approach is its ability to put the spotlight on areas of the project that have not yet been explored (and which would be unlikely to emerge through standard procedures), and which can be carried out in the ways used by explorer 1 or explorer 2. Explorer 3 acts as an "accelerator of change", which is possible only in a study carried out by people and for people.

A new definition of socially committed and people-oriented design, which puts people at the centre of the process, is increasingly becoming a key to the worldwide debate on, and practice of design. This has given greater strength to the design sector and to the impact it can have on our lives, and it constitutes an important addition to the previous models (political, technological, scientific and commercial, for example) which have so far acted as the driving force behind socio-cultural change.

To solve these problems, a fully understanding of the nature of the phenomena is required, without isolating them from their context, and work out solutions that are neither pre-established nor based on habit. The designer can and must draw on areas of knowledge and experience that range from mathematics to biology, human life and nature, in order no longer and not simply to deduce forms, but also to understand the phenomena, actions, and laws that regulate them.

To sum up, explorers 1, 2, and 3 constitute three possible approaches to dealing with the complex issues – which crop up in all design work – which the designer is called upon to undertake in three different ways (De Giorgi and Germak, 2008, p. 68):

- consciously, in interpreting the present
- as a scenario, to anticipate the future
- as navigation, to leave aside common sense.

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